RADAR

Radio Association Defending Airwave Rights, Inc.

July 25, 1990

Ms. Donna Searcy
Secretary
Federal Communications Commission
1919 M Street, N.W.
Washington, D.C. 20554

Dear Ms. Searcy:

On July 12th we filed a petition for rulemaking to amend Sections 15.245 and 90.103 of the Commission's Rules. Unfortunately, I feel that this petition was filed unsigned.

I have taken the liberty to execute and enclose additional copies of the petition for your files.

Sorry for any inconvenience this might have caused.

Respectfully submitted,

RADAR
Radio Association Defending Airwave Rights, Inc.

Janice Lee
President

Enclosures

R.A.D.A.R. Is A Non Profit Corporation

4949 South 25A, Tipp City, Ohio 45371 • (513) 667-5472 • FAX (513) 667-3178

BEFORE THE

Federal Communications Commission

WASHINGTON, D.C. 20554

In the Matter of

Petition for Amendment of Sections 15.245 and 90.103 of the Commission's Rules to Establish Commonality of the Frequency Bands Available for Unlicensed low power Field Disturbance Sensors	)	RM-

To: The Commission

PETITION FOR RULEMAKING

The Radio Association Defending Airwave Rights, Inc. (RADAR) hereby petitions the Commission to initiate a rulemaking proceeding to amend Sections 15.245 and 90.103 of the Commission's Rules to establish commonality of the frequency bands addressed in the two Sections. The aforementioned Sections both address the subject of field disturbance sensors. Further, they are interrelated, as Section 90.103 subparagraphs (c)23 and (c)24 make reference to the requirements of Part 15. As the proliferation of low power field disturbance sensors continues, harmful interference stemming from public misunderstanding may arise because of the differences in the rules and spectrum involved. The aim of the rulemaking actions discussed herein below is to clarify the rules involved.

I. GENERAL

1. RADAR is a non-profit association. Its headquarters are located in Tipp City, Ohio, and its membership is composed of radar detector manufacturers, distributors, and retailers as

well as over ten thousand independent motorists. The interests and activities of RADAR on behalf of its membership are national in nature.

2. Recent semi-conductor advances have allowed the development of very low cost Doppler field disturbance sensor modules on microwave frequencies using dielectrically resonated oscillator (DRO) technology involving sub-micron GaAs-FET devices. In contrast to older Gunn diode devices, the newer DRO GaAs-FET technology offers rapid proliferation of sensors on a multitude of microwave frequencies without special resonant cavity requirements. Expensive tooling for resonant cavities can be replaced with a simple printed circuit board incorporating the oscillator, receiver diode detector, and phased array "patch antenna."

II. SHARED USE OF SPECTRUM BY NON-GOVERNMENT RADIOLOCATION AND RADIO FREQUENCY DEVICES' COULD RESULT IN INTERFERENCE TO GOVERNMENT RADIOLOCATION AND SPACE SERVICES

3. RADAR has noted Commission actions over the past few years granting Part 90 type acceptance to low power, portable and mobile field disturbance sensors on frequencies that are secondary to the Government Radiolocation Service and/or Government deep space communications. These actions are based on current FCC Rule provisions. For example, in Section 90.103, most frequency bands above 3100 MHz available to licensees in the Radiolocation Service carry a "Footnote 12" stating "This frequency band is shared with and is on a secondary basis to the

Government Radiolocation Service." Section 15.5(a) of the FCC Rules states "Persons operating intentional or unintentional radiators shall not be deemed to have any vested or recognizable right to continued use of any given frequency by virtue of prior registration or certification of equipment . . . ." It seems clear, therefore, the intent of the Commission is to limit the likelihood of harmful interference to the primary user, i.e., the Federal Government.

4. Because some of these protected bands include frequencies on which new low power field disturbance sensors are being used, RADAR is concerned that this growing proliferation of low power sensors could result in harmful interference to services operated by the Federal Government. Non-government sensors are or can be used in and around areas where Government Radiolocation Service and Outer Space activities are conducted.

5. Heretofore, low power field disturbance sensors typically used only the 10.525 GHz and 24.125 GHz frequencies. Potential harmful interference was greatly reduced because these low power field disturbance sensors were certificated and used pursuant to Part 15 of the Commission's Rules and limited to only two frequencies. Multi-frequency or multi-band operation of low power field disturbance sensors was not the intent of the Commission. Additionally, sensors operating on 10.525 GHz are further limited to NON(AO) modulation only under footnote US59 to Section 2.106, United States Table of Frequency Al-

locations.1/

6. With a growing number of frequencies being used for low power portable and mobile sensors and the possibility of confusion of Part 90 devices with Part 15, Subpart F devices, RADAR expects that the typical operator will unknowingly use the sensor in areas or general localities where the primary allocated user could encounter harmful interference. Because the low power field disturbance sensor is very portable and highly mobile, before the primary user can locate the source of interference, the operator may have moved to a new location (or have ceased operation only to return again at a new date and time). The intermittent nature of the interference, if caused, could be mistakenly interpreted as an equipment malfunction by the primary user and thereby create unnecessary maintenance problems.

III. MISUNDERSTANDINGS BY THE PUBLIC MAY ARISE OVER APPARENT SIMILARITY OF PART 90 AND PART 15 RULES

7. Operation of a Part 90 type accepted field disturbance sensor requires the grant of a Part 90 license. Operation of a Part 15 Radio Frequency Device (i.e., a field disturbance sensor under Section 15.245) does not require a license. Members of the public not attuned to the fine points of the FCC Rules, in the view of RADAR, will likely operate without a license if they

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1/ Section 90.103(b)(20) and (22) also limits the use of 10.525 GHz to NON(AO) modulation; sensors operating on 24.125 GHz have a similar restraint in Section 90.103(b)(22).

regard themselves, whether true or not, as "Part 15 operators". There is a strong likelihood of this happening because there is a similarity between the older 10.525 GHz and 24.125 GHz sensors certificated pursuant to Part 15 of the Commission's Rules and the newer devices operating on new frequencies now coming off production lines and being placed into use pursuant to Part 90.

8. Apparently the Commission shares this concern. A recent FCC Public Notice dated April 23, 1990, FCC No. 2832 titled: Type Acceptance of Speed Measuring or "Radar" Equipment, stated:

> "It is emphasized that such type accepted equipment must be used in accordance with applicable FCC operating regulations and under a valid radio station license issued by the Commission. In addition, the licensee is cautioned that changes to type acceptance equipment are not permitted except as specifically provided for under Sections 2.1001(b) of the Commissions Rules."

While this addresses the Commission's concern about off-frequency operation and improper usage by unlicensed operators, it does not resolve the misunderstandings emanating from the differing interpretations of the Part 15 and Part 90 rules.

IV. STATEMENT OF PROPOSAL BY RADAR

9. RADAR proposes amendment of Section 90.103 and Section 15.245 of the Commission's Rules to establish uniform frequency bands for unlicensed low power field disturbance sensors. The Commission's prompt initiation of a rulemaking proceeding can help avert the situation of potentially harmful interference

from low power, portable and mobile sensors to the primary allocated Government Radiolocation Services and deep space research communications, as discussed above. Specific amendments to the Commission's Rules for carrying out this proposal are set forth in Appendix A hereto.

V. CONCLUSION

10. In conclusion, RADAR urges the Commission to undertake the action requested herein in the public interest noting:

(a) Proliferation or portable and mobile low power field disturbance sensors on the many frequency bands available can result in harmful interference to the primary users and could jeopardize safety of life.

(b) Due to a strong similarity of function and appearance, Part 90 sensors requiring licenses can be confused with the unlicensed Part 15 sensors.

(c) The problems of harmful interference and the need for the Commission to be able to enforce its Rules can best be addressed by requiring low power field disturbance sensors to comply with the provisions of a revised Section 15.245.

The proposed amendments of Section 15.245 and Section 90.103 are

attached hereto as Appendix A, which is incorporated as part of this Petition.

Respectfully submitted,

RADIO ASSOCIATION DEFENDING
AIRWAVE RIGHTS, INC.

By _____
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President

RADAR, Inc.
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Dated: 7/25/98

CEJ/LRR/R03/RADAR-P

APPENDIX A

RADAR proposes that:

(1) 90.103(c)(23) be revised to read:

90.103(c)(23) Devices designed to operate as field disturbance sensors on frequencies between 2435 and 10500 MHz with a field strength equal to or less than 500 millivolts per meter at 3 meters, on the fundamental frequency, will not be licensed or type accepted for use under this Part. Such equipment must comply with the requirements as set forth in Section 15.245 of this Chapter.

(2) 90.103(c)(24) be revised to read:

90.103(c)(24) Devices designed to operate as field disturbance sensors on frequencies between 10500 and 36000 MHz with field strength equal to or less than 2500 millivolts per meter at 3 meters, on the fundamental frequency, will not be licensed or type accepted for use under this Part. Such equipment must comply with the requirements as set forth in Section 15.245 of this Chapter.

(3) The title of Section 15.245 be revised to read:

15.245. Operation within the bands 902 - 928 MHz, 2435 - 2465 MHz, 5785 - 5815 MHz, 10500 - 10550 MHz, 13400 - 13500

MHz, 24075 - 24175 MHz, and 34300 - 34500 MHz.

(a) -- no change --

(b) The field strength of emissions from intentional radiators operated within these frequency bands shall comply with the following:

Fundamental Frequency (MHz)	Field of Fundamental (millivolts/meter)	Field Strength of Harmonics (millivolts/meter)
902-928	500	1.6
2435-2465	500	1.6
5785-5815	500	1.6
10500-10550	2500	25.0
13400-13500	2500	25.0
24075-24175	2500	25.0
34300-34500	2500	25.0

(1) -- no change --

(2) -- no change --

(3) -- no change --

Add a new subparagraph (4) Modulation employed by intentional radiators used as field disturbance sensors in the bands 10500 - 10550 MHz, 13400 - 13500 MHz, 24075 - 24175 MHz, and 34300 - 34500 MHz shall be NON(AO).